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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/087,872	03/01/2002	Yukiko Morishita	245402004500	6071

7590

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EXAMINER

TRAN, CHUC

ART UNIT

PAPER NUMBER

2821

DATE MAILED: 01/16/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/087,872

Applicant(s)

MORISHITA, YUKIKO

Examiner

Chuc D Tran

Art Unit

2821

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 March 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☒ Claim(s) 5 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>6</u> . | 6) <input type="checkbox"/> Other: |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 2 and 3 are rejected under 35 U.S.C. 102(b) as being anticipated by Hatano et al.

Regarding claim 1, Hatano et al disclose a semiconductor light emitting device comprising:

- a semiconductor light emitting device chip including a chip substrate and a stack formed of semiconductor layers stacked on a surface of the chip substrate (Col. 12, Line 44-55) (Fig. 13); and
- a mount member (121) having a mount surface (Fig. 16); wherein
- the semiconductor light emitting device chip is connected to the mount surface of the mount member (121) with the stack facing the mount surface (Col. 13, Line 38-65) (Fig. 16); and
- the mount member (121) includes a material higher in thermal expansion coefficient than a material for the chip substrate (123) (Col. 1, Line 46-50) (Col. 5, Line 45-52).

Regarding claim 3, the semiconductor light emitting device according to claim 1, wherein the chip substrate includes nitride based compound semiconductor and the stack includes nitride based compound semiconductor (Col. 5, Line 5-12).

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a. Claim 2 is rejected under 35 U.S.C. 102(e) as being anticipated by Kobayashi et al (USP. 6,455,342).

Regarding claim 2, Kobayashi et al disclose a semiconductor light emitting device comprising:

- a semiconductor light emitting device chip including a chip substrate and a stack formed of semiconductor layers stacked on a surface of the chip substrate (Fig. 3B,3C); and
- a mount member (14) having a mount surface (Fig. 3B); wherein
- the semiconductor light emitting device chip is connected to the mount surface of the mount member with the stack facing the mount surface (Col. 7, Line 48-67) (Fig. 3B);
- the mount surface is curved to protrude and the semiconductor light emitting device chip is curved along and connected to the mount surface (Fig. 3B,3C) (Col. 7, Line 13-67).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hatano et al.

Hatano et al disclose the semiconductor light emitting device as set forth above to include the mount member includes at least one of metal (Col. 5, line 45-52). However, Hatano et al is silent on the limitation of the mount member includes at least one of iron and copper such as describe in claim 4. Thus, it would have been obvious to one of ordinary skill in

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the art at the time the invention was made to provide the mount member includes at least one of iron and copper in order to improve thermal conductivity, since it was known in the art that (Col. 1, Line 60).

Allowable Subject Matter

5. Claim 5 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is an examiner's statement of reasons for allowance:

Prior art fails to disclose or suggest: the mount surface and the stack are connected by solder and the solder includes at least one selected from the group consisting of In, Sn, Pb and Au.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Citation of relevant prior art

Prior art Hatano et al (USP. 5,432,808) disclose a compound semiconductor light emitting device.

Prior art Shakuda (USP. 6,376,866) disclose a GAN semiconductor light emitting device.

Prior art Tanabe et al (USP. 6,469,320) disclose a semiconductor light emitting device.

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Prior art Shakuda (USP. 5,838,029) disclose a GAN type light emitting device formed on a silicon substrate.

Prior art Kobayashi et al (USP. 6,455,342) disclose a semiconductor device.

Prior art Kobayashi et al (USP. 6,278,173) disclose a semiconductor device.

Prior art Kobayashi et al (USP. 6,482,666) disclose a semiconductor device.

Inquiry

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chuc D Tran whose telephone number is (703)306-5984. The examiner can normally be reached on M-F Flex hours.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Don Wong can be reached on (703)308-4856. The fax phone numbers for the organization where this application or proceeding is assigned are (703)746-4048 for regular communications and (703)308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-0956.

TDC
January 13, 2003


Don Wong
Supervisory Patent Examiner
Technology Center 2800